

VITOSHINSKAYA, M.I., bibliograf; GEKKER, I.F., bibliograf; SHNIZYDER, R.A.,
bibliograf; GLAZKOVSKAYA, Ye.A.; KLYASHTORNYY, S.O.; SOLOV'YOV,
S.P., doktor geologo-mineral.nauk, red.; KULIKOV, M.V., kand.
biolog.nauk, red.; PERLIN, S.S., red.izd-va; GUROVA, O.A.,
tekhn.red.

[Geological literature of the U.S.S.R.; a bibliographical year-
book for 1954] Geologicheskaya literatura SSSR; bibliograficheskii
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geol. i okhrane nadr, 1957. 185 p. (MIRA 12:1)

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70-5-12/31
Soviet Physics

70-5-12/31

AUTHORS: Zhdanov, G.S., Solov'yev, S.P. and Venektsev, Yu.N.

TITLE: The Structural Coefficients of the Internal Field in Ferro-electrics with the Perovskite-type Structure. (*Strukturnyye koeffitsiyenty vnutrennego polya v segnetoelektrikakh so strukturoy tipa perovskita*)

PERIODICAL: Kristallografiya, 1957, vol.2, no.5, pp. 639-645 (USSR)

ABSTRACT: Data published in the literature for the values of the structural coefficients of the internal field in perovskite-type crystals are critically examined. Relations are set up between the idealised cubic perovskite and the cases in which there are dipoles in the [001], [011] or [111] directions. The structural coefficients are calculated for the tetragonal cell of $PbTiO_3$ at room temperature taking account of the ionic displacements.

The field at the i-th ion is:

$$E_i = E + \sum_{k=1}^m \left(\frac{4\pi}{3} + c_{ik} \right) p_k$$

where m is the number of sub-lattices each consisting of the ions of the k-th sort, E is the external field, p_k is the

Card 1/4

70-5-12/31

The Structural Coefficients of the Internal Field in Ferroelectrics
with the Perovskite-type Structure.

dipole moment of the k-type of ions, c_{ik} are the structural coefficients. In the case where the dipoles are in the z-direction:

$$c_{ik} = \sum_j \frac{2z_{jk}^2 - x_{jk}^2 - y_{jk}^2}{\left(x_{jk}^2 + y_{jk}^2 + z_{jk}^2 \right)^{5/2}}$$

where x_{jk} , y_{jk} , z_{jk} are the co-ordinates of the j-th dipole of the k-th sort relative to a dipole of the i-th sort and summation is over each dipole of the k-th sort. For the cubic cell, the c_{ik} can be expressed in terms of two quantities P and Q. The values which various authors find for these values are compared, the best values being $P = -15.04102/V$ and $Q = 4.33387/V$ as found by McKeehan (Phys. Rev. 42, 913, 1933 and 72, 78, 1947).

Card 2/4

7C-5-12/31

Structural Coefficients of the Internal Field in Ferroelectrics
in the Perovskite-type Structure.

$C_{ik} = \begin{matrix} 0 & 0 & -2Q & Q & Q \\ 0 & 0 & -2P & P & P \\ -2Q & -2P & 0 & Q & Q \\ Q & P & Q & 0 & -2Q \\ Q & P & Q & -2Q & 0 \end{matrix}$ There are 5 sub-lattices
for the ABO_3 formula.
 C_{ik} are the values for the
truly cubic cell.

Where the distortions of the cubic cell are small (1%) the C_{ik} are different from the C_{ik} only by 2-3%. Even for PbTiO_3 , where the distortions are large, these do not differ by more than 20%. The actual values of the coefficients for tetragonal PbTiO_3 , where $c/a = 1.064$ are calculated and tabulated with those of McKeehan (cubic, by Ewald's method) and of Hagendorf (BaTiO_3 with $c/a = 1.010$) (Zeit.f.Physik, 132, 394-421, 1952). There are 1 figure, 3 tables and 14 references, 2 of which are Slavic.

ASSOCIATION: Karpov Physico-chemical Institute
Card 3/4 (Fiziko-khimicheskiy Institut im. L.Ya. Karpova)

The Structural Coefficients of the Internal Field in Ferroelectrics
with the Perovskite-type Structure.

70-5-12/31

SUBMITTED: May 31, 1957.

AVAILABLE: Library of Congress

Card 4/4

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the field of petrology. Zap. Vses. min. ob-va 86 no.1:155-164 '57.
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Soviet Geology

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APPROVED FOR RELEASE: 08/25/2000

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S.G., bibliograf; SOLOV'YEV, S.P., doktor geologo-mineralog. nauk.
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Geological Faculty, Lviv University, Ukraine; SUMY, N.U.

200th anniversary of the Department of Geology of the Frantsko Lvov
University. Zap.Vses.zin.ch.vu 93 no.6:735-736 '64.

(MIRA 1814)

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CIA-RDP86-00513R001652320008-4"

KASHKAY, M.A.; MAKHMUDOV, S.A.; SOLOV'YEV, S.P.

All-Union Congress of the Mineralogical Society of the U.S.S.R. Izv.
AN SSSR. Ser. geol. 29 no.12:118-121 D '64.

(MIRA 16:1)

BULOV'YEV, Iur., doktor geol.-mineral. n.

Study of the mineral resources of the Soviet Union: Congress
of the All-Union Mineralogical Society in Leningrad, Vort.
AN SSSR 34 no.8:100 Ag '64. (MKh 12.12)

SOLOV'YEV, S.P.

Activity of the Mineralogical Society of the U.S.S.R. in the period from 1957 to 1963 and current problems of the Society. Zap. Vses. min. ob-va 93 no.5:496-505 '64.

Review of the work of the Congress of the Mineralogical Society of the U.S.S.R. Ibid.:510-516 (MIRA 17:11)

1. Vitse president Vsesoyuznogo mineralogicheskogo obshchestva.

KHARAKOZ, I.I.; SOLOV'YEV, S.P., red.; ANOKHINA, N.G., tekhn. red.

[Economic aspects of collective farming in the Chu Valley] Voprosy
ekonomiki kolkhozov Chuiskoi doliny. Frunze, Akad. nauk Kirgizskoi
SSR, 1958. 59 p. (MIRA 11:?)
(Chu Valley—Collective farms)

VENEVTSEV, Yu. N.; LYUBIMOV, V. N.; SOLOV'YEV, S. F.; ZHDANOV, G. S.

Calculation of internal electric fields and their gradients
in perovskite compounds with specific dielectric properties.
Izv. AN SSSR. Ser. fiz. 28 no. 4:630-635 Ap '64.
(MIRA 17:5)

123-1-1182

Translation from: Referativnyy Zhurnal, Mashinostroyeniye, 1957,
Nr 1, p. 174 (USSR)

AUTHORS: Kabachinskiy, N. N., Solov'yev, S. S.

TITLE: Determination of Stresses in Propeller Shaft and in
Screw Propeller When Its Blades Strike a Hard Object
(K zadache opredeleniya napryazheniy v grebnom valu i v
grebnom vinte pri udare yego lopasti o tverdyy predmet)

PERIODICAL: Trudy Gor'kovsk. politekhn. in-ta, 1956, 11, Nr 4, pp.12-24

ABSTRACT: In discussing this problem the authors take certain design
of propeller shafting with a screw propeller protected
from dynamic overstress by the introduction of additional
yielding elements in the junction of detachable blades
with the nave, in the bearing bushing of the propeller
shaft, and in the junction of the latter with the idler
shaft. They analyze the motion of the given mechanical
system while in vibration after an impact. The Lagrange-
type equations of motion are formed and a method for
calculation of inertia coefficients are indicated.

Card 1/2

123-1-1182

Determination of Stresses in Propeller Shaft and in Screw Propeller
When Its Blades Strike a Hard Object (Cont.)

The problem is reduced to a numerical integration of system of non-linear equations. An example is given for the calculation of the system vibrations on the base of which they made the deduction that the stresses caused by the impact in the blade attain their maximum long before they reach the subsequent members of propeller shafting. Therefore, the use of arresting devices (in these links of the tube) along the twisting moment cannot protect the screw propeller from the breakage in case of an impact.

G.M.A.

Card 2/2

ZOLOTOV, V.I., inzh.; IL'INSKIY, D.Ya., inzh.; Prihimali uchastiye:
ALEKSANDROV, V.P., inzh.; SOLOV'YEV, S.S., inzh.; BADANINA,
A.I., kand.tekhn.nauk; FIRSOVA, E.A., kand.tekhn.nauk;
KOLOSOVA, G.I., mladshiy nauchnyy sotrudnik

Effect of the geometry of the screw on the conditions of the
extrusion of artificial leather. Nauch.-issl.trudy VNIIPIK
no.12:87-95 '60. (MIRA 16:2)
(Leather, Artificial)

L 41189-65 EWT(1)/T GW
ACCESSION NR: AP5001878

S/0286/64/000/023/0030/0030

AUTHORS: Nikolayev, A. F.; Solov'yev, S. S.

TITLE: Machine for providing snow-ice covering on roads and airfields. Class 19,
No. 166727

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1964, 30

TOPIC TAGS: ice, road, snow

ABSTRACT: This Author Certificate introduces a machine for making snow-ice layers on roads and airfields, consisting of a frame (to be towed) supported on the working surface by a front ski and with the working apparatus located at the rear part of the frame. It contains a vibration plate and cutter in a heating chamber into which hot gases are introduced from the combustion chamber for melting the snow cover. To obtain a higher density and uniformly high ice covering and to increase its load carrying properties, a frame is located between the cutter and the vibration plate which can be moved vertically by, for example, a screw mechanism. On a platform, connected to this frame with spring shock absorbers, a vibrator is mounted which provides vertical vibrations to vertical streamlined stays which support a hinged deep-compacting heating plate. Hot gases from the combustion

Card 1/2

L 41189-65

ACCESSION NR: AP5001878

chamber reach the snow through perforations in the cylindrical top plate of the heating plate. The external stays of the deep vibration plate have passages to provide the hot gas to the plate while the center stay is provided with a device, for example, a mechanical device, for changing the operating depth of the compacting heating plate.

ASSOCIATION: none

SUBMITTED: 24Dec62

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

me
Card 2/2

SOLOV'YEV, S.V.

Third regional conference of representatives from countries
of the Eurasian region. Mezhdunar.geofiz.god no.7:21-24
'59. (MIRA 13:2)
(International Geophysical Year)

KLOCHKO, I. H.; SELIV'YEV, S. V.

Dairy Cattle

Results of efforts to build up a highly productive herd of cows Sov. zootekh. 7 no. 7.
1952. Kandidat Sel'skokhozyaystvennykh Nauk Ukrainskiy Nauchno-Issledovatel'skiy
Institut Zhivotnovodstva

SO: Monthly List of Russian Accessions, Library of Congress, September 1952 [redacted], Uncl.

SOLOV'YEV, S. V.

"The Serum Therapy and Chemotherapy of Experimental Gas Gangrene
Produced by Associations of Microorganisms." Cand Med Sci, Acad
Med Sci USSR, Moscow, 1955. (KL, No 13, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical
Dissertations Defended at USSR Higher Educational Institutions (15)

MATVEYEV, K.I., professor; SOLOV'YEV, S.V., kandidat meditsinskikh nauk;
VOLKOVA, Z.M., kandidat meditsinskikh nauk (Moskva)

Epidemiology of tetanus. Fel'd. i akush. 21 no.2:19-21 F '56.
(TETANUS) (MLRA 9:5)

MATVEYEV, K.I.; SOLOV'IEV, S.V.; VOLKOVA, Z.M.

Clostridium tetani in soil and tetanus morbidity. Zhur.mikrobiol.
epid. i immun. 28 no.3:54-58 Mr '57. (MLRA 10:6)

1. Iz Instituta epidemiologii i mikrobiologii imeni N.F.Gamalei
Akademii meditsinskikh nauk SSSR.

(SOIL, microbiology,

Clostridium tetani, eff. on tetanus epidemiol. (Rus))

(TETANUS, epidemiology,

eff. of soil Clostridium tetani (Rus))

MATVEYEV, K.I.; SOLOV'YEV, S.V.; VOLKOVA, Z.M.

Epidemiology of tetanus [with summary in English]. Khirurgia 33
no.9:80-85 S '57. (MIRA 11:4)

1. Iz Instituta epidemiologii, mikrobiologii imeni pochetnogo
akad. N.F.Gamalei AMN SSSR.
(TETANUS, epidemiol.)

SOLOV'YEV, S.V. (Moskva).

Serum therapy in an experimental eye infection caused by *Vibrio comma*
and aerobic bacteria. *Eksp. khir.* 3 no.6:61 N-D '58. (MIRA 12:1)
(SERUM THERAPY) (EYE--DISEASES AND INFECTS)

SOLOV'YEV, S.V.; MATVEYEV, K.I.

Epidemiology and prevention of tetanus in Krasnodar Territory. Zbir.
mikrobiol. epid. i imun. 29 no.12:87-93 D '58. MIRA 12:1)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.
(TETANUS,
epidemiol. & prev. (Rus))

SOLOV'YEV, S.V.; MATVEYEV, K.I.

Serotherapy of experimental gas infection induced by Clostridium oedematis or septicum associated with aerobic organisms; author's abstract. Zhur.mikrobiol.epid. i immun. 30 no.5:126 My '59. (MIRA 12:9)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AIQI SSSR.

(GAS GANGRENE, exper.
eff. of serother. on gangrene induced by
Clostridium oedematis or septicum assoc.
with aerobic organisms (Rus))

(SEROTHERAPY,
in exper. gas gangrene induced by Clostridium
oedematis or septicum assoc. with aerobic
organisms (Rus))

SOLOV'YEV, S.V.; MATVEYEV, K.I.

Effect of synthomycin and levomycin alone or in combination with
antigangrene serum in experimental gas infection produced by an
association of microorganisms. Eksp. khir. 5 no. 2:62 Mr-Ap
(MIRA 14:1)

'60.

(GANGRENE) (CHLOROMYCETIN) (SERUM)

SOLOV'YEV, S.V.; MATVEYEV, K.I.

Effect of levomycin on experimental gas infection caused by
associations of microorganisms. Antibiotiki 6 no.11:1026-1030
(MIRA 15:3)
N '61.

1. Institut epidemiologii i mikrobiologii imeni N.F.
Gamalei AMN SSSR.
(LEVOMYCETIN) (GAS GANGRENE)

SOLOV'YEV. S.V.

Scientific activity of N.M.Berestnev; on the 50th anniversary of his death; 1851 - 1910. Zhur. mikrobiol., epid. i imman. 40 no.1:153-155 '63. (MIRA 16:10)

1. Iz kabineta istorii mikrobiologii i epidemiologii Instituta epidemiologii i mikrobiologii imeni Gamaeli AMN SSSR.

SOLOV'YEV, S.Ye., starshiy mekhanik-defektoskopist

Proposal of flow detector operators. Put' i put khoz. 7 no.5:38
'63. (MIRA 16:7)

1. Stantsiya Chermushka, Gor'kovskoy dorogi.
(Railroads--Rails--Testing)

L 8952-66 DWT(d)/FSS-2

ACC NR: AP5026491

SOURCE CODE: UR/0286/65/000/019/0025/0025
34
15AUTHOR: Solov'yev, Sh. G.

ORG: none

TITLE: Device for bilateral transmission of unipolar pulsed signals of standard magnitude. Class 21, No. 175083

SOURCE: Byulleten' izobretений i tovarnykh znakov, no. 19, 1965, 25

TOPIC TAGS: signal transmission, pulse signal

ABSTRACT: This Author Certificate presents a device for bilateral transmission of unipolar pulsed signals of standard magnitude along one lead. Double coil relays with the coils connected in opposition are used. One end of the first coil of these relays is connected directly to the lead (see Fig. 1).

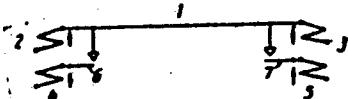


Fig. 1. 1 - Lead; 2 and 3 - double coil relays; 4 and 5 - second coils of double coil relays; 6 and 7 - contacts.

Card 1/2

UDC: 621.394.432

L 8952-66

ACC NR: AP5026491

To simplify the device, one end of the second coil is connected to the lead through contacts which are closed with the transmission of the signal. The free ends of all the coils are interconnected through a power supply. Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 20Apr61

R 24 11
Card 2/2

SULOV'YEV, T. G.

Water - Aeration

Increase combative measures against loss of dissolved oxygen through winter freezes. Ryb.
khoz., 23 No. (1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

DOROKHOV, S.M.; LIATMAN, E.M.; LASPIN, B.A.; SOLOV'IEV, T.T.; MARTYSHEV,
F.G., prof., nauchnyy red.; PETROV, A.A., red.; UDALOV, A.O.,
tekhn.red.

[Fish culture on farms] Sel'skokhozisistvennoe rybovodstvo.
Moskva, Izd-vo M-va sel'khoz.SSSR, 1959. 198 p. (MIRA 13:6)
(Fish culture)

SOLOV'YEV, Timofey Timofeyevich; KHLATINA, Ye.S., spets. red.;
AYNZAFT, Yu.S., red.

[Pond fishing] Vylov ryby iz prudov. Moskva, Izd-vo
"Pishchevaiia promyshlennost', " 1964. 131 p.
(MIRA 17:6)

SOIKV'YEV, T. Ye.

Soils - Crimea

Division of agricultural soil in the Crimean steppe into districts. Vest. Mosk. un., 5, no. 6, 1950.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

L 27709-66

ACC NR: AF6004214

(A)

SOURCE CODE: UR/0331/65/000/010/0021/0021

AUTHOR: Bugay, V.; Solov'yev, V.

ORG: Dal'NIILKh

TITLE: Fire tank tractor

SOURCE: Lesnaya promyshlennost', no. 10, 1965, 21

TOPIC TAGS: fire fighting equipment, safety engineering

ABSTRACT: A fire-fighting vehicle comprised of a water tank mounted on tractors of the TDT-60 or TDT-75 hauling type was described. The tank was designed by the Mechanization Department of Dal'NIILKh and built by the Komsomol'skles repair shop. The 5 cu m tank was made of steel and was provided with a priming cup and a manhole. Its net weight was 1850 kg. The auxiliary equipment consisted of a 200-m hose, a motor-pump⁰ of MP-800⁰ or MP-600 type, a motor-saw, portable sprayers, shovels, axes and other devices. The fire tank tractor was used for fighting forest fires with an empty tank. Its speed was approximately 3 km/hr with filled tank and about 7 km/hr with an empty tank. The use of the fire fighting tractor was explained and illustrated. It was proposed to put several dozen of these tanks into operation in 1965. Orig. art. has: 1 photo.

SUB CODE: 13 / SUBM DATE: None / ORIG REF: 000 / OTH REF: 000

UDC: 634.0.432

Card 1/1

BLG

SOLOV'YEV, V., kand.khimich.nauk; KUZNETSOVA, G.

Changes occurring in the connective tissue during meat aging. Mias.ind.
SSSR 34 no.1:56-57 '63. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti.
(Meat—Testing)

SOLOV'YEV, V.; AGLITSKAYA, A.; KULIK, Ya.; BARER, T.

Meat fermentation as a means for improving its quality. Miss.
(MIRA 17:2)
ind. SSSR 33 no.4:51-54 '62.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy
promyshlennosti (for Solov'yev, Aglitskaya).

SOLOV'YEV, V., kand. khim. nauk; LIASKOVSKAYA, Yu., kand. tekhn.
nauk; INOZEMTSEVA, M.

Review and bibliography. Mias. ind. SSSR 34 no.5:58-61
'63. (MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut
myasnoy promyshlennosti.

TATSIY, Ye., inzh.; SOLOV'YEV, V., inzh.

Experimental construction of industrial buildings and structures.
Prom. stroi. i inzh. soor. 5 no.5:23-26 S-O '63. (MIRA 16:12)

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652320008-4

SOLOV'YEV, V., inzhener-kapitan 2-go ranga
Ship atomic power plants. Tekh. i vooruzh. no. 3:88-91 Mr '64.
(MIRA 17:8)

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652320008-4"

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652320008-4

RASSHOZHELYATEL', Yu. (Rasshodelyatel'); SOKOLOV, V. (Rasshodelyatel')

Efficient translator system or circuit. Project No. 136.

(NRA 1841)

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652320008-4"

IOFFE, Naum Mikhaylovich; IVANOV, Vadim Aleksandrovich; NIKITIN,
Vasiliy Vasil'yevich; SOLOV'YEV, V.A.; EPSHTEYN, Ya.V.;
VINOKUR, I.Ye., red.

[Hydraulic suspension system consisting of separate units
for farm tractors] Razdel'no-agregatnaia gidravlicheskaia
navesnaia sistema sel'skokhoziaistvennykh traktorov. [By]
N.M.Ioffe i dr. Izd.2., dop. i ispr. Moskva, Vysshiaia
shkola, 1964. 175 p. (MIRA 17:6)

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652320008-4

SOLOV'YEV, V.A.

Thunderstorm activity over the European territory of the
U.S.S.R. Trudy GGO no.163:76-86 '64 (MIRA 1841)

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652320008-4"

SOLOV'YEV, V.A., Inst. fiz. atom. nauk

Evaluation of thunderstorm activity according to data on the
direction of atmospheric. Meteor. i gidrol. no.1:30-35 Ja '65.
(MIRA 18:2)

1. Glavnaya geofizicheskaya observatoriya im. Voyeykova.

MOKHNO, N. V., et al.

*Mesozoic stratigraphic-faunal complexes in western
Transbaikalia. Issled. i profils. no. 4 (36-48) '65.*

(MIRA 18:8)

Iz. Instituta geologii i geofiziki Sibirskego otdeleniya AN
SSSR, Novosibirsk, i Buryatianskoye geologicheskoye upravleniye,
Ulan-Ude.

SOLOV'YEV, V.A., kand. fiz.-matem. nauk

Diurnal and annual variation of thunderstorm activity in the
north of the Atlantic Ocean and seas of western Europe and
the Far East. Meteor. i gidrol. no.10:32-36 C '65.

(MIRA 18:9)

1. Glavnaya geofizicheskaya observatoriya.

9.25.9021073
S/106/61/000/002/002/006
A055/A133

AUTHOR: Solov'yev, V. A.

TITLE: Miniature delay line with great resolving power

PERIODICAL: Elektrosvyaz', no. 2, 1961, 12 - 22

TEXT: Delay lines are widely used in television, radar and especially in electronic automation and in the computing technique. Therefore, they must satisfy the following conditions: 1) - their resolving power must be great; 2) - their size must be extremely small; 3) - their construction must be simple. The first of these three conditions is fully satisfied only in the case of delay lines with distributed constants. The particular feature of the delay line described in this article is the division of the line into sections with the aid of screening short-circuited coils; practically sufficient reduction of coupling between sections is thus ensured. This method permits to obtain structurally simple lines of a volume less than 1 cm^3 , with a build-up time of the transient characteristic $T_1 > 20 \cdot 10^{-9} \text{ sec}$ and with a wave impedance $\rho > 0.3 \text{ kilohm}$, for delay magnitudes $T_d = (10 + 15) T_i$ [Abstractor's note: subscript d (delay) is the translation of the original $_3$ (zaderzhka)]. The sections of the line form one

Card 1/2

34832

S/106/62/000/003/002/010
A055/A101

9,9590

AUTHOR

Selcov'yev, V.A.

TITLE

Influence of the design parameters on the characteristics of the
delay lines with distributed constants

PERIODICAL

Elektrosvyaz', no. 3, 1962, 8 - 12

TEXT After some general explanations, the author states the results of an experimental investigation carried out to determine the influence of the main parameters of a delay line with distributed constants (density of the winding and number of longitudinal slots on the conducting surface of the cylindrical rod) upon the frequency response of the line. This investigation was effected on delay lines using 5 mm quartz-glass rods with silver coating. The diameter of the wire was 0.1 mm, the length of the spiral was 60 mm and the width of the slot was 0.1 mm. The obtained experimental results are grouped in a table and illustrated by a set of graphs showing the dependence of the frequency band upon the number of slots at definite winding densities. In the second part of the article, the author determines the effective part of the frequency passband. He uses the above experimental results and a formula deduced by him in an earlier

Card 1/2

33776
S/108/62/017/001/003/007
D271/D304

9,2590

AUTHOR: Solov'yev, V.A.

TITLE: Delay lines with distributed constants for nanosecond pulse circuits

PERIODICAL: Radiotekhnika, v. 17, no. 1, 1962, 22 - 31

TEXT: Delay lines with distributed constants are analyzed in order to investigate the feasibility of miniature lines for high frequencies. A method of calculation is presented and formulae are derived for build-up time and distributed capacity of a solenoid line; constructions of multi-conductor solenoidal lines with a double return conductor are considered. Existing designs of lines are not satisfactory for pulses of the order of $(25 - 100) \cdot 10^{-9}$ sec. because it is impossible to obtain wave resistance $\rho < 300$ ohm; simpler designs have a low resolving power, they are bulky and constructionally complicated. The new lines are simple in construction, time constants $t_d = 10^{-9}$ sec., $\rho \geq 30$ ohm, and delay times $T_d \geq 6t_1$ can be obtained with a volume of $0.7 - 1.4 \text{ cm}^3$. Distributed capacity is calculated.

33776
S/108/62/017/001/753/007
D271/D304

Delay lines with distributed ...

Wound for a coil wound on a conducting cylinder, the capacity of a single turn is replaced by that of a capacitor with parallel plates whose width is equal to the diameter of the wire d , the length of cavity and the distance between plates is $r_y \approx 0.1 d$. The expression for the capacity is

$$C = \frac{0.086 S_{eq} \epsilon_{eq}}{\Delta r}, \text{ pF where } \Delta r = 0.1 d_{en} + \Delta; \quad (2)$$

d_{en} is wire diameter over enamel, Δ - thickness of the film separating the conducting former from the wire; $S_{eq} = d l_w k$; l_w - length of wire; $k \approx 0.95$ takes into account the reduction of conducting surface by longitudinal slots, ϵ_{eq} is the equivalent dielectric constant based on dimensions of wire insulation and insulating film. Formula (2) is valid for a close winding (normalized pitch $g = 1$) and has an error of $\pm 5\%$ for $d \ll 10 \Delta$. The expression of the capacity of a spaced winding ($g > 1$) is

Card 27

Delay lines with distributed ...

33776
S/108/62/017/001/003/007
D271/D304

$$C = \frac{0.0888 \cdot \epsilon_{\text{eff}} \cdot \tan \theta}{\Delta r} \cdot \frac{\text{arc} \operatorname{tg} \frac{E}{1 + \frac{2\Delta}{d}}}{\text{arc} \operatorname{tg} \frac{d_{\text{en}}}{d} + \frac{2\Delta}{d}}, \text{ pF.} \quad (5)$$

Formula (5) has an error of up to 7 % for $g = 1 - 8$ and $d \leq 10 \Delta$. For a given resolving power the volume of the delay line is proportional to the third power of the former diameter. A delay line is calculated assuming the identical rise- and decay-time of the pulse. The resolving power of the line is defined as the shortest pulse which can be transmitted with maximum amplitude in a matched condition. When the line is loaded with R_k , C_k , its effective resolving power is

$$t_{p \text{ min}} = \tau_1 \sqrt{1 + \left(\frac{\tau_k}{\tau_1}\right)^2} \quad (10)$$

Carri 3-4

33776
S/108/62/017/001, 003/007
D271/D304

Delay lines with distributed ...

where $\tau_k = 15 R_k C_k$, the intrinsic resolving power of the line is $\tau_p \approx \tau_k$. The possibility of designing a line with specified parameters and dimensions depends first of all on phase distortion, when amplitude distortion is small, phase distortion $\phi = 30^\circ - 0.35^\circ$ is of no importance. This determines phase cut off frequency $f_{\text{lim}\phi}$. The inductance of a solenoidal coil depends on the frequency, approximately, according to the expression

$$\frac{L}{L_0} \approx 1 + 25 \left(\frac{D}{2\lambda} \right)^2, \quad (12)$$

where L_0 is the inductance per unit length at low frequencies and λ wavelength in the coil, this is valid when $D/\lambda \ll 0.5$. Assuming $\phi = 0^\circ$ the phase cut-off frequency is

$$f_{\text{lim}\phi} = \frac{0.26}{L_0} \left(\frac{1}{D} \right)^{2/3}, \quad (13)$$

and the build up time of a solenoidal line in function of T_d , D and C_{par} is

33776
S/108/62/017/001/003/007
D271/D364

Delay lines with distributed ...

is

$$\tau_1 = 1.35 T_d \left(\frac{D}{l}\right)^{2/3}. \quad (14)$$

The above expression determines the required ratio l/D . Short-circuited coils are recommended for large l/D ratios, they allow a 1.5-2.5 times increase in the resolving power by correcting the phase characteristic. A line with $\rho \geq 40$ ohm, $\tau_1 \geq 10 \cdot 10^{-9}$ sec, $T_d \geq 1$, had a volume of 1.4 cm^3 can be built by using a single-layer solenoidal coil wound with several 0.03 - 0.06 mm wires in parallel. Use of this construction may afford a reduction of ρ by as much as 7.6 times. A construction with double return path is also shown; this reduces ρ by $\sqrt{2}$ because capacity is doubled. If double-return and multi-conductor winding are combined it is possible to reach ρ of 30 ohm with a miniature line. Double-return increases also the inter-winding capacity and this compensates for the inductance fall at higher frequencies; the losses are reduced because of the more uniform current distribution in the conductor. There are 11 figures and 8 references: 5 Soviet-bloc and 3 non Soviet-bloc. The referen-

Card 5/6

SOLOV'YEV, V.A., inzh.; KAZANTSEV, A.A., inzh.

Performance of the VG-10 automatic gas cutouts at a substation.
Elek. sta. 33 no.4184 Ap '62. (MIRA 15:7)
(Electric cutouts) (Electric substations)

ACC NR: AP6030165

SOURCE CODE: UR/0120/66/000/004/0224/0225

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tehnicheskiy institut AN SSSR)

TITLE: Single action KD-1 electromagnetic air valve with switch on signals

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 224-225

TOPIC TAGS: reactor control, valve, isotope separation, radioactivity measurement, radiation dosimetry, radiation instrument, ELECTROMAGNETIC PROPERTY

ABSTRACT: In 1962 the dosimetric control system of the VVR-M reactor was equipped with 65 KD-1 electromagnetic air valves of single action with switch on signals. The valves have been operating continuously for 2 years, each switching at least 50,000 times during this period without a single breakdown. Monthly inspections of the tightness of the air control system disclose that the valves are: overall dimensions - 250 x 120 mm², weight - 4.6 kg, flow-passage cross-sectional area - 16 mm, working voltage - 48 v, type of current - d.c., working current - 0.3 a, signal circuit voltage - 0.5 a, spring pressure on locking piston - 4 kg, stroke of locking piston - 5 mm, temperature of heating surface of valve body at an ambient temperature of +20 C - 45 C, and air leakage at 750 torr - 0.003 l/min, at most. A diagram of the valve is shown below. Orig. art. has: 1 figure.

Card 1/2

UDC: 621.039.586/587

ACC NR: AP6030165

SOURCE CODE: UR/0120/66/000/C04/0224/0225

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tehnicheskiy institut
AN SSSR)TITLE: Single action KD-1 electromagnetic air valve with switch on signalsSOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 224-225TOPIC TAGS: reactor control, valve, isotope separation, radioactivity measurement,
radiation dosimetry, radiation instrument, ELECTROMAGNETIC PROPERTY

ABSTRACT: In 1962 the dosimetric control system of the VVR-M reactor was equipped with 65 KD-1 electromagnetic air valves of single action with switch on signals. The valves have been operating continuously for 2 years, each switching at least 50,000 times during this period without a single breakdown. Monthly inspections of the tightness of the air control system disclose that the valves are: overall dimensions - 250 x 120 mm², weight - 4.6 kg, flow-passage cross-sectional area - 16 mm, working voltage - 48 v, type of current - d.c., working current - 0.3 a, signal circuit voltage - 0.5 a, spring pressure on locking piston - 4 kg, stroke of locking piston - 5 mm, temperature of heating surface of valve body at an ambient temperature of +20 C - 45 C, and air leakage at 750 torr - 0.003 l/min, at most. A diagram of the valve is shown below. Orig. art. has: 1 figure.

Card 1/2

UDC: 621.039.586/587

ACC NR: AP7000795

(A,N)

SOURCE CODE: UR/0089/66/621/110/0396/0363

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

ORG: none

TITLE: Improvement of the system of stationary dosimetric control of the VVR-M reactor

SOURCE: Atomnaya energiya, v. 21, no. 5, 1966, 386

TOPIC TAGS: nuclear reactor operation, nuclear reactor control, radiation dosimetry, nuclear safety/ VVR-M reactor, USIT-1 dosimeter

ABSTRACT: This is a summary of article no. 112/3573, submitted to the editor and filed, but not published in full. The shortcomings of the earlier system are briefly summarized and it is reported that in the improved system, used for the reactor at the Physicotechnical Institute im. A. F. Ioffee, AN SSSR, these shortcomings have been eliminated to a considerable degree. The air-control system has a more highly branched network of sampling lines, with provision made for manual, semi-automatic, and automatic control. Both counter-type and ionization-chamber pickups can be used to determine the concentration of radioactive gases in the air. Control over the exhaust of the radioactive gases is by means of continuous pumping and is continuously monitored by means of an automatic recorder. The γ radiation is monitored by two type USIT-1 instruments, with additional "cactus" type instruments being used in the hot chambers and in the pump room of the first loop and on the cover of the reactor.

Card 1/2

UDC: 621.039.58

